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In SCIENCE for September 24, 1897, I mentioned these treasures as 'extended researches anticipating the discoveries of Cayley and Klein.' Engel now says of them, p. 393: "J. Bolyai had also commenced to work out a great and consecutive presentation of geometry, but what he had written down remained entombed in his papers and has never been published.

"Staeckel will before long make generally accessible so much of it as issuable for publication, and it will then appear that J. Bolyai in his exposition set to work according to principles similar to those Lobachévski actually followed." But though Lobachévski has given his complete message to the ages, yet is perceptible a touch more masterful in even the brief two dozen pages of the young Magyar.

Through a given point to draw a parallel to a given straight; to draw to one side of an acute angle the perpendicular parallel to the other side; to square the circle—these problems would be sought in vain in the two quarto volumes of Lobachévski.

Bolyai János gives solutions of them startling in their elegance. For example (Halsted's Bolyai § 34), "Through D we may Draw $DM \parallel AN$ in the following manner: From D drop $DB \perp AN$; from any point A of the straight AB erect $AC \perp AN$ (in DBA), and let fall $DC \perp AC$. A quadrant described from the center A in BAC, with a radius = DC, will have a point B or O in common with ray BD. In the first case the angle of parallelism manifestly is right, but in the second case it equals AOB. If, therefore, we make $BDM = AOB$, then DM will be $\parallel BN$."

About 100 pages of Engel's book are devoted to a life of Lobachévski, yet no word is said of his wife, his children, his family life, his home fortunes and misfortunes, nor is mentioned the biography by E. F. Letvenov (St. Petersburg, 1894, pp. 79) containing romantic pictures of these eternal interests.

GEORGE BRUCE HALSTED.

AUSTIN, TEXAS.

The Spirit of Organic Chemistry. An Introduction to the Current Literature of the Subject. By ARTHUR LACHMAN, B.S., PH.D., Professor of Chemistry in the University of Oregon. With an Introduction by PAUL C. FREER,

M.D., PH.D., Professor of General Chemistry in the University of Michigan. New York, The Macmillan Company. 1899. Pp. xviii + 229. Price, \$1.50.

Under the above title an historical account of the development of some of the most important chapters is given. The subjects selected are among those which have exercised the minds and skill of the greatest chemists, and which are to-day before the chemical world. Problems which have been solved in a single masterly research are omitted. In the nine chapters the following subjects are treated: The constitution of rosaniline, Perkins's reaction, the constitution of benzene, the constitution of aceto-acetic ether, the uric-acid group, the constitution of the sugars, the isomerism of fumaric and maleic acids, the isomerism of the oximes, and the constitution of the diazo compounds.

The author has used excellent judgment in condensing the literature, and has presented the subject in a logical and clear manner. The account is brought up to date, even the most recent work receiving brief mention. The book is, therefore, an introduction to the chemical literature of to-day. On this account it is of special value to the student who has just mastered the text-books of organic chemistry and who desires to go farther. The mass of literature which is summed up in but 225 pages is so great and complex that it is doubtful whether the student would have the time and energy to get as clear a conception of the subject by searching through the journals as he can get by a careful study of this book. After mastering it he would be in a position to follow a paper on any of the subjects treated.

The literature of organic chemistry is so vast that there is room for such critical reviews, for, it seems to the writer, they tend to inspire rather than prevent reading. Professor Lachman's book will make the reading of the current journals easier and is, therefore, helpful. It is a contribution to chemical history and supplements Schlorlemmer's well-known "Rise and Development of Organic Chemistry."

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